



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/913,887 | 12/14/2001 | Jan Svoboda | 3594-041-999 | 5988 |

7590 03/11/2003

Pennie & Edmonds
1667 K Street NW
Washington, DC 20006

EXAMINER

RODRIGUEZ, JOSEPH C

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3653

DATE MAILED: 03/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/913,887

Applicant(s)

SVOBODA, JAN

Examiner

Joseph C Rodriguez

Art Unit

3653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

The disclosure is objected to as lacking a section entitled "Brief Description of Drawings". See MPEP 608.01(f). Appropriate correction is required.

Claim Objections

The claims are objected to as the form of claims 1-7 is improper. Where a claim sets forth a plurality of elements or steps, as in the instant claims, each element or step should be separated by a line indentation. See MPEP 608.01(m) and 37 CFR 1.75(i).

Further, in claim 2, line 3, the language "Cdipole" should read "C-dipole".

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Here, Applicant claims a method of separating but omits a separating step.

Regarding claims 2 and 3, the multiple use of "and/or" language renders the claims indefinite. That is, although the use of "and/or" by itself is generally not indefinite, the use of "and/or" multiple times in a single claim that itself depends off of claim language that is conditional leads to confusion in determining what elements are actually being claimed. Examiner recommends amending the claims to eliminate all instances of "and/or".

Regarding claim 7, the language "can be" in claim 7 (ln. 3) renders the claims indefinite as it is unclear whether the features subsequent to the "can be" language are a necessary part of the claimed invention. Applicant must positively recite the features of the claimed invention. Examiner thus recommends eliminating all instances of "can be" from the claim language.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaiser et al. ("Kaiser")(US '156).

Regarding claims 1, 6, 7, Kaiser teaches an apparatus and method (Fig. 1-7) for separating materials of different densities comprising using a separation chamber (near 30, 31) and a C-dipole electromagnet ("C" formed by yoke 16 and coils 26, 28 along with poles 12, 14) to generate a magnetic field to control the density of the ferrofluid, wherein materials of different densities are separated by the degree they sink or float (Abstract).

Regarding claim 2, Kaiser teaches controlling the current passing through the coils (26, 28; col. 5, ln. 23 et seq.) and shaping the C-dipole tips (Fig. 3).

Regarding claim 5, Kaiser teaches the use of a constant magnetic field gradient (col. 2, ln. 43 et seq.).

Claims 1, 2 and 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Mir (US '297).

Regarding claims 1, 6, 7, Mir teaches an apparatus and method (Fig. 1-3) for separating materials of different densities comprising using a separation chamber (near 19) and a C-dipole electromagnet ("C" formed by yoke 12 and coils 26, 28 along with poles 14, 16) to generate a magnetic field to control the density of the ferrofluid, wherein materials of different densities are separated by the degree they sink or float (Abstract).

Regarding claim 2, Kaiser teaches controlling the current passing through the coils (26, 28; col. 2, ln. 27 et seq.) and shaping the C-dipole tips (Fig. 2).

Regarding claim 5, Kaiser teaches the use of a constant magnetic field gradient (col. 1, ln. 7 et seq.).

Claims 1 and 4-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Fay et al. ("Fay")(US '765).

Regarding claims 1, 6, 7, Fay teaches an apparatus and method (Fig. 1-5) for separating materials of different densities comprising using a separation chamber (21) and a open dipole electromagnet (10, 30) to generate a magnetic field to control the density of the ferrofluid, wherein materials of different densities are separated by the degree they sink or float (Abstract).

Regarding claim 4, Fay teaches achieving a required magnetic field pattern in the vertical direction by controlling the design of the coil (Fig. 3).

Regarding claim 5, Fay teaches the use of a constant magnetic field gradient (col. 1, ln. 10 et seq.).

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Reimers et al. ("Reimers")(US '465).

Reimers teaches a method (Fig. 2) for separating materials of different densities comprising using a permanent magnet (21, 22) to generate a magnetic field to control

the density of the ferrofluid, wherein materials of different densities are separated by the degree they sink or float (Abstract).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quets et al. ("Quets")(US '037) in view of what is well known in the art.

Quets teaches a split pair of magnets (Fig 1b, 1c) to separate materials based on different densities within a separation chamber (Abstract). Quets thus teaches all that is claimed except for expressly teaching the use of electromagnets with coils specifically designed to generate a required magnetic field pattern. This feature, however, is well-known in the magnetic separating arts as electromagnets are commonly interchanged for permanent magnets and the mere shaping of the electromagnetic coils is a common design parameter when creating a magnetic field. Examiner takes Official Notice of such. Further, the use of electromagnets with different coil shapes allows one to better control the magnetic field. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Quets as taught above.

Conclusion


Any references not explicitly discussed above but made of record are considered relevant to the prosecution of the instant application.

Further, with regards to the oral restriction requirement previously made, the instant Examiner has withdrawn this requirement after a review of the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph C Rodriguez whose telephone number is 703-308-8342. The examiner can normally be reached on M-F during business hours, with alternate Mondays off. The fax phone number for the organization where this application or proceeding is assigned is 703-306-4195.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

March 5, 2003


DONALD P. WALSH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600